<u>WHAT IS CLAIMED AS NEW AND DESIRED TO BE SECURED BY LETTERS</u>
<u>PATENT OF THE UNITED STATES IS:</u>

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1. A method of analyzing a medical image to arrive at information concerning a disease that may be evidenced by a lesion in the medical image, the method comprising:

extracting at least one lesion feature from the medical image; and

arriving at the information concerning the disease, based on non-parametric estimation of the distribution of the feature over the database.

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2. The method of Claim 1, wherein the information comprises at least one from a group including:

a decision on whether a lesion is present in the medical image;

a characterization of a likelihood that the lesion is malignant;

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a characterization a stage of cancer of the lesion;

a characterization of the lesion as being malignant or benign; and

a characterization of a likelihood that a malignancy will develop in the future.

3. The method of Claim 1, wherein the risk feature extracting step comprises:

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analyzing a surrounding environment of the lesion.

4. The method of Claim 3, wherein the analyzing step comprises:

assessing a parenchymal pattern surrounding the lesion in human breast tissue in a mammogram constituting the medical image.

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5. The method of Claim 1, wherein the lesion feature extraction step comprises:

determining at least one feature from a group of features comprising skewness of gray-values, spiculation, margin definition, shape, density, homogeneity, texture, asymmetry, and temporal stability.

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6. A system implementing the method of Claims 1, 2, 3, 4 or 5.

7. A computer program product storing program instructions for execution on a computer system, which when executed by the computer system, cause the computer system to perform the method recited in any one of Claims 1, 2, 3, 4 or 5.